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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/888,527	06/25/2001	Tomio Sugimoto	0887.021A	9977

23405 7590 09/08/2004

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ALBANY, NY 12203

EXAMINER

DUONG, THANH P

ART UNIT	PAPER NUMBER
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1764

DATE MAILED: 09/08/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/888,527	Applicant(s) SUGIMOTO ET AL.	
	Examiner Tom P Duong	Art Unit 1764	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 June 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 22-36 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 22-30 is/are allowed.
- 6) ☒ Claim(s) 31-36 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☒ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>6/25/01</u> . | 6) <input type="checkbox"/> Other: _____ |

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DETAILED ACTION

1. The preliminary amendment filed on 6/25/01 is acknowledged. The original claims 1-21 have been canceled. New claims 22-36 have been added.

Specification

2. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 31-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ninane et al. (5,478,447) in view of Hirano et al. (6,352,653). Regarding claims 31, 33,

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and 35, Ninane discloses a waste treatment equipment (Fig. 4) comprising: means (reactor 3 and Col. 6, lines 4-53) for dechlorinating a flue gas (smoke 2) which causes hydrogen chloride contained in said flue gas to react with a sodium-based dechlorinating agent (sodium bicarbonate via line 4) to remove sodium chloride (dust collector 6 and Col. 6, lines 58-61) as residue of dechlorination, and the like from said residue of dechlorination, then, dissolving said residue of dechlorination by adding water (via line 10), separating water-insoluble constituents not dissolved in water (filter 13 and Col. 7, lines 46-48) from an aqueous solution (via line 45) in which said residue of dechlorination is dissolved, and adjusting pH (via line 32 and Col. 8, lines 31-35) of a remaining aqueous solution after separation of said water-insoluble constituents (polyvalent metals); and said sodium-based dechlorinating agent comprising a sodium hydrogencarbonate (sodium carbonate). Ninane fails to disclose a hydrophilic anti-caking agent, and having an angle of repose of 400 or more, a dispersibility of less than 50 and a floodability index value of less than 90. Hirano teaches hydrophilic anti-caking agent (0.3 to 2% by mass and mean particle diameter of 0.005 to 0.1 μm) is added to the sodium hydrogencarbonate to prevent coagulation of the sodium hydrogencarbonate and facilitate dispersion of the sodium hydrogencarbonate in the flue gas (Col. 9, lines 36-52). Thus, it would have been obvious in view of Hirano to one having ordinary skill in the art to modify the apparatus of Ninane with the addition of anti-caking agent as taught by Hirano in order to suppress coagulation of the sodium hydrogencarbonate, which improves high reaction efficiency. With respect to the anti-caking agent having an angle of 400 or more, a dispersibility of less than 50 and

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floodability index value of less than 90, Hirano does not disclose expressly the characteristics of these particles; however, Hirano discloses the sodium hydrogencarbonate and anti-caking agent having the optimum particle sizes of the claimed invention and the particles of these components improve reactivity and fluidity (Col. 6, lines 55-63). It would have been obvious in view of Hirano to one having ordinary skill in the art to provide the particles having above claimed characteristics at least thru routine experimentation in order to ensure good reactivity and fluidity of the components. Where the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine optimization. See *In re Aller*, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955). Regarding claims 32 and 34, Ninane fails to disclose sodium hydrogencarbonate has a mean particle diameter of 2 um to 30 um. Hirano teaches it is desirable to have the sodium hydrogencarbonate having a range of 1-20 um in order to effectively remove the acid component. Thus, it would have been obvious in view of Hirano to one having ordinary skill in the art to modify the sodium hydrogencarbonate with the particle size as taught by Hirano to effectively removing acid components. Regarding claim 36, Ninane discloses all the limitations as described above but fails to disclose means for removes dioxin. Hirano teaches the alternate means of removing acid component such as adsorbent of activated carbon, which removes dioxin. Thus, it would have been obvious in view of Hirano to one having ordinary skill in the art to modify the apparatus of Ninane with alternate means of removing acid components such as the use of adsorbent of activated carbon, which facilitates the removal of dioxin.

Allowable Subject Matter

Claims 22-30 are allowed.

Conclusion


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tom P Duong whose telephone number is (571) 272-2794. The examiner can normally be reached on 8:00AM - 4:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Caldarola can be reached on (571) 272-1444. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Tom Duong
September 01, 2004

TD


Glenn Caldarola
Supervisory Patent Examiner
Technology Center 1700